



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,180	12/01/2000	Robert B. Staszewski	TI-31248	4517
23494	7590	05/13/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			TRAN, KHAI	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	

2631
DATE MAILED: 05/13/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/728,180

Applicant(s)

STASZEWSKI ET AL.

Examiner

KHAI TRAN

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 6 and 12 are objected to because of the following informalities:

Appropriate correction is required.

Regarding 6, line 2, the term "the value of the phase error" should be --a value of the uncorrected phase error.

Regarding claim 12, lines 2-3, the term "the value of the phase error signal" should be --a value of the uncorrected phase error signal--; line 3, the term "a phase detector " should be --the phase detector--.

Claim Rejections - 35 USC § 112

2. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, line 1, the term "the loop gain constant" lacks antecedent basis; lines 4-5, the term "the phase/frequency acquisition mode" lacks antecedent basis; lines 7-8, the term "the tracking mode" lacks antecedent basis.

Regarding claim 3, line 1, the term "the normalized loop gain ratio" lacks antecedent basis.

Regarding claim 10, line 2, the term "the regular adjustment" lacks antecedent basis.

Regarding claim 13, line 3, the term "the instant" should be --an instance--; line 11, the term "the phase error adjustment value" lacks antecedent basis.

Regarding claim 14, lines 1-2, the term "the summing circuit adds the phase error adjustment value" is not clear what is element or value used to add with the phase error adjustment value by the summing circuit.

Regarding claim 15, line 2, the term "the normalized loop gain" lacks antecedent basis.

Claims 2, 4-9, 11-12, 16-17 are rejected by virtue of their dependency.

Allowable Subject Matter

3. Claims 1 and 13 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
4. Claims 1-12, 14-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of the record discloses a method for adjusting a loop gain in a phase locked loop (PLL) synthesizer having a controllable oscillator, comprising the steps of: performing following two steps when the PLL synthesizer transitions from the phase/frequency acquisition mode into a tracking mode: (b1) adding a DC offset to the PLL synthesizer's controlled oscillator-tuning signal; and (b2) changing the first PLL loop gain constant (α_1) to a second PLL loop gain constant (α_2) which is smaller in

Art Unit: 2631

value than the first PLL loop gain constant (α_1) as recited in claim 1; and the prior art of the record fails to disclose a PLL synthesizer detector, comprising: a phase detector for providing an uncorrected phase error signal (ϕ_1); a calculation circuit for calculating an offset adjustment value ($\Delta\phi$) which is equal to $(\alpha_1 / \alpha_2 - 1) \cdot \phi_1$, where (α_1) is a first PLL loop gain constant and (α_2) is a second PLL loop gain constant which is smaller in value than the first loop constant (α_1); multiplier circuit for multiplying the summation circuit output signal with either the first (α_1) or second (α_2) PLL loop gain constant and providing the result as multiplier output signal that is provided to the input of the oscillator as tuning word as recited in claim 13.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Black et al (U.S. Pat. 6,157,271) disclose a direct modulation phase locked loop (PLL).

Aman et al (U.S. Pat. 6,192,088) disclose a carrier recovery system.

Hwang et al (U.S. Pat. 6,532,271) disclose a carrier recovery and Doppler frequency estimation.

Staszewski et al (U.S. Pat. 6,587,529) disclose a phase detector architecture for phase error estimating and zero phase restarting.

Sutardja (U.S. Pat. 6,732,286) disclose a high latency circuit.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (703) 305-1876. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on (703) 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KHAI TRAN
Primary Examiner
Art Unit 2631



KT
May 11, 2004